

WHAT IS CLAIMED IS:

1. A communicating apparatus, suitable for a telephone system, comprising:

a directional speaker, for transmitting a directional carrier wave to a user;

a receiver, for receiving at least an audio signal produced by a user such that the
5 directional carrier wave is not received by the receiver; and

a control unit, coupled to the directional speaker and the receiver, for transmitting
an electrical audio signal received from the directional speaker, and for transforming the
audio signal received from the receiver into an electrical audio signal and transmitting to
the communicating network.

10 2. The communicating apparatus as recited in claim 1, wherein the directional
carrier wave includes an ultrasonic carrier wave, and wherein the ultrasonic carrier wave
propagates along a predetermined direction within a predetermined range in the air.

3. The communicating apparatus as recited in claim 2, wherein the ultrasonic carrier
wave is self-demodulated back to the audio signal through the air within the
15 predetermined range.

4. The communicating apparatus as recited in claim 3, wherein the receiver is
spatially excluded from the predetermined range.

5. The communicating apparatus as recited in claim 3, wherein the predetermined
direction and a characteristic direction of the directional speaker form a solid angle
20 smaller than about 30°.

6. The communicating apparatus as recited in claim 1, wherein the directional
speaker comprises a plurality of acoustic transmitting units.

7. The communicating apparatus as recited in claim 6 further comprising:

a pre-compensating unit, for receiving the audio signal and compensating the audio signal in a preceding stage and outputting a compensated audio signal;

an ultrasonic wave modulating unit, for providing an ultrasonic carrier wave;

an amplitude modulating unit, for receiving the compensated audio signal and receiving the ultrasonic carrier wave, such that the compensated audio signal is carried by the ultrasonic carrier wave; and

a power amplifier, for receiving an output from the amplitude modulating unit.

8. A communicating apparatus, comprising:

an output module, for polarizing a remote audio signal so as to propagate the remote audio signal directionally in the air;

a receiving module, for receiving at least a local audio signal generated by a user, wherein the remote audio signal is not received by the receiving module; and

a control unit, coupled to the output module and the receiving module, for transforming an electrical audio signal transmitted from a communicating network into the remote audio signal, transmitting the transformed local audio signal from the electrical signal to the communicating network, allowing the user to communicate with a communicating terminal via the communicating apparatus through the communicating network.

9. The communicating apparatus as recited in claim 8, wherein the remote audio signal propagates within a predetermined range along a predetermined direction, and the receiving module is spatially excluded from the predetermined range.

10. The communicating apparatus as recited in claim 8, wherein the output module comprises:

a pre-compensating unit, for compensating the remote audio signal in a preceding stage;

an ultrasonic modulating unit, for providing an ultrasonic carrier wave;

an amplitude modulating unit, coupled to the pre-compensating unit and the
5 ultrasonic modulating unit, for receiving the compensated remote audio signal and the ultrasonic carrier wave, so as to carry the remote audio signal with the ultrasonic carrier wave;

a power amplifier, for receiving an output of the amplitude modulating unit; and

a directional ultrasonic beam transmitting device, for transmitting the ultrasonic
10 carrier wave to the user, wherein the ultrasonic carrier wave is self-demodulated back to the remote audio signal through air.

11. The apparatus as recited in claim 10, wherein the directional ultrasonic beam transmitting device comprises a plurality of acoustic transmitting units.

12. The apparatus as recited in claim 8, wherein the communicating apparatus
15 comprises at least one selected from a group consisting of a line telephone system, a cordless telephone system, a mobile phone system and an Internet telephone system.

13. The apparatus as recited in claim 8, wherein the receiving module comprises a receiver.

14. A communicating method for a communicating system generating low echo,
20 comprising:

receiving a remote audio signal from a transmitting end;

transforming the remote audio signal into a directional audio signal for a receiving end;

receiving a local audio signal received by a receiving terminal of the receiving end, wherein the directional audio signal does not propagate through the receiving terminal; and

transmitting the local audio signal to the transmitting end.

5 **15.** The communicating method as recited in claim **14**, wherein the directional audio signal propagates along a predetermined direction within a predetermined range.

16. The communicating method as recited in claim **14**, wherein the step of transforming the remote audio signal into the directional audio signal comprises transforming the remote audio signal to an ultrasonic carrier wave.

10 **17.** The communicating method as recited in claim **16**, wherein the ultrasonic carrier wave is self-demodulated back to the remote audio signal through air.